THE

HORTICULTURAL REGISTER,

AND

GARDENER'S MAGAZINE.

NOVEMBER 1, 1836.

Art. I. — *Remarks on the Influence of Light, in Vegetation, with a late Observation in the Tuberose.* By J. L. R.

The importance and influence of light in the economy of vegetation, is as striking a phenomenon as it is a familiar one. Thus the most casual observer of plants must have noticed the strong tendency of leaves and stems to turn towards that quarter from whence the greatest amount of light may be obtained. The young shoots and branches of a trained tree grown on a wall, the leaves of a grape vine under a glass roof, and even the plants which are cultivated in parlors, all evince the same decided partiality for light. The laminæ or leaves contain two sets of vessels, purposely contrived for the health and vigor of these organs. Those of the upper surface elaborate the ascending sap or nutriment by means of light and air, while those of the under surface transmit the elaborated and changed substance through the petiole to the bark. This simple fact easily explains the manifest disquiet, which every plant exhibits when forcibly perverted from its accustomed position — that position most favorable to its health and growth.

Curious experiments may be made on this singular economy of leaves. Whoever has had occasion to turn their geraniums or roses in their windows to prevent their too great inclination towards the glass, and thus their tendency to grow crooked and unsightly, must have noticed with what rapidity the leaves accommodate themselves to the new exposure. The brighter the light, the sooner is the change effected. But if this operation be too often repeated, the plant suffers more or less, and this action is rendered less apparent.

Calendrini ascertained that vine leaves, when plucked from the stem and suspended by a thread, turned to the light. This experiment must be made with care and delicacy, to insure success. The attempts which branches and roots, which bear leaf buds, make to reach the light, when secluded from its presence in a dark cellar, by very unusual elongations, are familiar to all.

Nor do the leaves alone exhibit a decided partiality for a peculiar employment of light in their organic structures and necessities. The flower in almost every instance seeks its influence The nocturnal species are indeed striking exceptions; while very many of the diurnal, are as impatient of the absence of light, as are the former of its presence. The unsurpassed beauty of *Cereus grandiflorus*, and the lovely tints of the humbler and delicate *Anagallis*, serve in their expanded flowers as common illustrations of both these assertions.

The old and singular notion that the *Helianthus* was so particularly fond of the sun's rays as to court his presence by turning its stem to his diurnal course is not wholly abandoned to this day. The quaint language of Girard so long ago as 1597, informs us that "the flower of the Sunne is called in Latine *Flos Solis*, taking that name from those that have reported it to turne with the sunne, the which I could never observe, although I have endeavoured to finde out the truth of it, but I rather thinke it was so called bicause it doth resemble the radiant beames of the sunne, whereupon some have called it *Corona Solis*, and *Sol Indianus*, the Indian sunne flower — in English the flower of the sunne, or the sunne flower."

A very beautiful instance of this tendency for the sun's light is at this moment before me. A flower scape of *Polianthes tuberosa* describes in its diurnal movements a very considerable *arc* and actually travels in each twelve hours of daylight the distance of more than twelve inches. The window in which the plant stands is towards the south-east. It is evident that it gains its upright (vertical) position in the night, after having been inclined first towards the east in the morning and then towards the west as the sun declines. I have so often watched its movements, that there can be no deception in its apparent course.

ART. II. — *Cause of the Decay of Peach Trees.* By SOLOMON J. SCOTT, M. D.

DEAR SIR, — In pursuance of my promise, I now offer the discovery I have made, relative to the decay of peach trees.

The peach tree is caused to decay by the ravages of a worm, which originates from the egg of a large fly, that bears some resemblance to a wasp This fly pierces the outer bark of the tree, above ground, and deposites an egg in the inner or green part of the bark; as soon as the worm is hatched, it makes its way downwards, between the bark and the wood of the tree.

These facts are shown by an examination of the tree, for where the worm began, the hole is small, and gradually enlarges, until you come to the worm, or the place where it made its exit; thus corresponding with what is observable in the progress of all wood worms.

If the worm begin a few inches above the ground, the frost sometimes comes on before it gets far enough below the ground, and destroys it; but if the ground about the roots of the tree be covered with snow during the severe frosts which prevents the ground from freezing deep, the worm in this case, will survive the coldest winter. In the spring the worm commences its ravages anew; and now is the time it does the most mischief — for as soon as the sap begins to move, it oozes out in the form of gum and water from the fresh wounds made by the teeth of the worm, until it is grown, when it voluntarily leaves the tree, which it does about the last of June, or first of July. Half a dozen worms about the roots of a common sized tree, will destroy the whole tree; but if the worms are only on one side of the tree, then only one side or perhaps a few limbs of the tree will be found dying. The effects of the worms extend from one half to an inch on each side of its track, or hole in the bark, as I have always observed the bark to be dead for that distance; so that a worm for every inch and a half round a tree kills it all but the roots, and sometimes even these; but if the worms are scattered so as to leave spaces of two or more inches, the tree will be observed to revive after the first of July, or near that time; but if the succeeding winter is favorable to the life of the worms or the egg, the next spring the ravages are commenced anew by another generation, and the life of the tree is destroyed.

About three years ago my attention was drawn to this subject from

the almost universal decay of peach trees, in my neighborhood. You will recollect that the winter was severely cold, yet in the coldest weather then, the ground was covered with snow. All my neighbors attributed the decay of the peach trees, the following spring, to the severe frosts — but I felt doubtful, as I knew that peach trees thrive well in all parts of Canada, where it is much colder than here.

On examining some trees that were decaying, I found a quantity of gum on the ground, by the roots, and on scraping the earth from them, I found that the gum had oozed out (part of it,) under the surface of the earth. I then began to scrape away the outside bark, and soon came to the worm, and was at once convinced, from the effects I saw, that these were the cause of the tree's decay ; and from that time I have carefully observed its progress.

The worm is white, similar in size, shape and color, to the common white, flat headed wood worm. Its mouth is black, or perhaps, nearer to a mahogany color, and its progress is uniformly downwards; it sometimes begins from three to six inches above ground, but generally near the surface, and is seldom found deeper than six inches below the ground.

I have been thus particular to induce farmers to examine their trees. Wherever gum is found at the root, there the worm, or traces of its ravages will be found. And having observed that where a few trees have been standing in a yard, and the ashes of the fireplace have been thrown about their roots, or where they were overflowed with water in the winter, the trees are not affected and are alive. On observing these facts, I advised several farmers of my acquaintance, to have ashes thrown about the roots of the peach trees, every spring at least; and in all cases, the experiment succeeded — not a single instance of a worm, or death of a tree, except from external violence, has occurred among those that have been so treated.

I will now offer a few remarks as to the proper methed of cultivating the peach tree, with success for bearing fruit to perfection.

1. The young trees or sets, should never be trimmed or pruned near the ground; and if the seedling sends forth many branches from the root, they should be carefully kept to the root, and set out again (when transplanted,) in a cluster, as they come up ; or branched out from seeds, and suffered to grow as they will.

2. The peach, of all others, requires an open place, clear of shade and in a warm soil, and a soil that is tolerably dry. I have always remarked that trees bear earliest when the ground about them is tol-

erably compact; and a fair situation to the sun is indispensable, to give the fruit an early ripening and fine flavor; hence the custom of setting out peach trees in fence corners, and shady grounds, will always prove a source of disappointment to those who thus plant their trees, in a soil so cold as the soil of most parts of this state is found to be; and care should be taken that cattle do not bite off the limbs of the trees, nor break the bark so as to suffer the gum to escape in the beginning of warm weather, when the gum is essential to the blossoming and bearing of the tree. I do not suppose that the loss of gum, to a certain extent, is very injurious to the tree after the fruit is nearly ripe, but I have seldom seen trees bear their fruit well when the bark is broken, or pierced, so as to suffer the gum to escape during the blossoming and bearing season. Even the young peach is apt to fall off, if pierced while very young by insects, so as to suffer the gum to run out.

These are facts which point out plainly, the disposition (if I may use the term,) of the peach tree; and if our farmers become convinced that they must suit their cultivation and care to the habits and nature of the tree, we shall have plenty of peaches. Our climate, and much of our soil, is well adapted to the prosperity of this, or any other fruit tree. We have had some very unfavorable seasons for the peach, and almost all other fruits; but economy and diligence, and proper care, until our trees can acquire a proper size for bearing, is all that is wanting on our part; and we will trust to a kind Providence to bring the seasons round, with their former blessings.

I have purposely avoided technical terms, that this communication may be intelligible to all who feel interested in the prosperity of the peach.—*Plough Boy.*

Art. III. — *Remarks on the Culture of Hardy Deciduous and Evergreen Shrubs.*

The culture of hardy shrubs is in general simple and easy, the chief things to be noticed are — the proper season for planting — the situation in which the plants will thrive — the kind of soil best suited to their growth — and the encouragement given to enable them to thrive afterwards.

The proper season for planting. — As soon as the leaves begin to fall in October, deciduous trees may be planted with safety, and although this planting continues until the trees begin to swell their buds again in the spring, yet those plants have invariably succeeded best with us which were shifted in October, November, February and March, and those the worst that were planted in December, January and April.

Evergreens in general, if taken up carefully, may be planted with success in any season of the year, provided dull and dripping weather be taken advantage of for that purpose. There are particular seasons, however, when they will thrive with much greater freedom than at others. If the situation be dry and the soil light and sandy they should be planted (with the exception of hollies) in November and December, if the weather be mild; on the other hand, if the situation be low and the soil retentive of moisture, they should be planted in May. In both cases it is indispensable that all large trees and shrubs be removed with good balls, and that the roots be uninjured. Hollies should be removed from the end of May to the end of June.

In planting evergreens, I perfectly agree with Mr M'Nab, that whether it be done in a dull day, a wet day, or a dry day, it is very necessary to keep in view the expediency of keeping the plants for as short a time out of the ground as possible — if only a few minutes, so much the better; and in all cases where it can be done, when great numbers are to be planted, we should, if possible, have some men stationed to take up the plants, others to carry them, and a third to set them into the ground.

"In all seasons, situations, and soils the plants should be well soaked with water as soon as the earth is put about the roots. Where the water is not at hand, so that it may not be easily carried or wheeled by men, a horse with a water barrel on wheels should be used. — As soon as the plant has been put into its place the earth should be filled in, leaving a sufficient hollow round the stem, and as far as the roots extend, to hold water, which should then be poured on in sufficient quantity to soak the ground down to the lowest part of the roots; in short, the whole should be made like a kind of puddle."

"By this practice which is particularly necessary in spring and autumn planting, the earth is carried down by the water, and every crevice among the roots is filled. Care must always be taken to have as much earth above the roots of the plants as will prevent their being exposed when the water has subsided. The best plan is to take

an old birch broom, or anything similar, and laying it down near the root, pour the water upon it; this breaks the fall of the water, and prevents the roots from being washed bare of such earth as may adhere to them; in this way time is saved, for the water may be poured out in a full stream from the pail, a watering pot, or even from a spout or pipe in the water cart or barrel, when the situation is such that this can be brought up to the plant."

"After the first watering has dried up, the earth should be levelled round the stem of the plant, and as far out as the water has been put on, but not trod; if the plants are large a second watering is sometimes necessary, but in ordinary sized plants one watering is quite sufficient; and after remaining twentyfour hours more or less, according to the nature of the soil, the earth about the stem and over the roots, should be trod as firm as possible, and, after treading should be dressed with a rake."

2. "*The situations in which the plants will thrive.* — With regard to the situation in which each shrub should be planted, little can be said here; to form a correct judgment of this, a knowledge of the natural habits of each is required; this knowledge may be easily obtained by referring to a botanical catalogue, and other works treating on the subject. Some shrubs love a dry and elevated situation, and will not thrive crowded with others, — some are rather tender and must have warm and sheltered places, — others are very hardy and will thrive planted any where, others again will not grow freely unless they are placed in low, damp ground, — and others do not flourish if much exposed to the rays of the sun.

3. "*The kind of soil best suited for them.* — With respect to soil, hardy shrubs may be divided into two kinds, viz: first, shrubs requiring common soil; and second, those shrubs constituting the American garden. A rich, light, hazel loam undoubtedly suits the greater part of the first class of plants, although many of the stronger growing kinds will make fine bushes on almost any kind of soil. The American plants, *Kalmias*, *Rhodedendrons*, *Andromedas*, &c. &c. make the finest plants and the best show if they are planted in a soil composed for the most part of sandy peat; but in the absence of this, a very good compost may be made for them of light hazelly loam, river sand, and vegetable or leaf mould, equal parts, or a little peat earth mixed with it. After having taken out the original soil from the proposed border to about a foot and a half deep, substitute the above mixture in its place.

4. "*To encourage the growth of the Shrubs after being planted.* — Whilst the plants are small, constantly keep down all rank growing weeds, and clear off all rubbish that would otherwise retard their growth; also they receive much benefit by the surface of the ground being often stirred with a Dutch hoe, as it prevents the surface baking hard in dry weather."

Watering shrubs, except in peculiar situations, during dry summers, appears to be of very little, if any benefit; on the other hand, it takes up much time, and is the means of the ground baking hard when dried by the sun again. When they have advanced to a large size all the care required is to cut off the overhanging branches, so as not to allow them to smother each other, or the stems of those overhung will become naked and unsightly. — *Mechanic and Farmer.*

Art. IV. — *Selections.*

Hybrids. — *Does the stock produce any influence upon the seed of the graft to alter its character?*

In other words, *will the seed of the graft partake of the character of the tree on which the graft grows?* Here is a pear grafted on a quince stock — we plant the seed of that pear, — will this seed produce a fruit which is neither a pear nor a quince, but a *hybrid*, partaking of the character of both? We propose the query, not because we have any doubts on this subject, but for the purpose of noticing the following statement, made in a communication of David S. Porter, in the Silk Culturist for August, in relation to grafting the Chinese mulberry on the other species, as the native and white: "Independent of their being no advantage as to hardiness, there will arise a disadvantage when the grafted trees come to bear seed. *The tree will be hybrided, and will not of course produce trees like itself from the seed;* and thus we shall get our mulberry trees mixed together, until like the peach, apple, &c., we shall not be able to tell what seed the tree will produce."

We know of no way in which *hybrids* are produced but by the communication of the pollen dust of the flower of one species to the flower of another. Perhaps we do not apprehend the meaning of the writer. If he means that by grafting the Chinese into the top of the native mulberry, among its branches, where its flowers come

in contact with the flowers of the native, its seed will become hybridized, the statement may be correct. But if, on the contrary, he means that a graft will produce a hybrid seed *from the influence of the stock on which it grows through the sap*, we must think the statement erroneous. The only influence we are aware the stock produces upon the graft, is the earlier or later ripening of the fruit, and maturing of the wood by the more scanty or more abundant supply of sap, and by the earlier or later suspension of the vegetative process in the stock. So far also as these causes operate in the *ungrafted* tree, to alter the flavor of the fruit, will they operate upon the fruit of the graft to alter its flavor. Those fruits which grow on trees whose growth is stinted, and whose supply of sap is but small, ripen earlier, and are *higher flavored*, than the same kinds of fruit growing on trees of more vigorous growth, and more abundant sap. The pear engrafted on the quince, on account of the more limited supply of sap it receives, is said to ripen its fruit earlier than when growing on its own root. The natural period in which the stock ripens its own fruit, produces an influence also, it is said, upon the ripening of the fruit of the graft. Thus if the stock be of an early kind, the fruit of the graft growing on it will ripen earlier than if the stock was of a late kind ; because, at the season of the maturing and ripening of the fruit, nature supplies each tree with the kind and quantity of juices necessary for this object. We may take advantage of these laws of the vegetable economy, in hastening or retarding the period of the ripening of the fruit, and of the wood. Thus, if we have a tree which ripens its fruit too late for our climate, we must engraft or bud it on a stock of dwarfish stinted growth, or which ripens its fruit early ; or if we have a tree which prolongs its growth too late in the fall to mature its wood, and thereby subject to be killed by the winter, we must graft or bud it on one which suspends its growth early in autumn, and thereby check the growth of the graft, force it to harden its wood, and prepare for winter. It is upon this principle we have contended that an advantage is to be gained by grafting or budding the Morus multicaulis on the native or white mulberry. If we were wrong in the views we have now advanced, we wish to be set right. — *Genesee Farmer.*

Peach Trees. — Mr William Phillips, of Pennsylvania, has derived great benefit from the application of air slacked, old effete lime to peach trees, the effects according to his account have been very

great. He puts about a peck of lime to each tree; he thinks it useful as a preservative against the insect so fatal to these trees. We have then two applications recommended, unleached ashes and lime, and from our own experience are enabled to recommend both. We are not sure which has the preference. The lime and the ashes should both be dug in, every spring. A friend suggests, that he killed his young peach trees by lime. Caution is needed in the application. — *Mass. Ag. Repos.*

A Cure for the Red Ants. — The evils of this little visitant, are well known to perhaps every house wife, and perhaps nothing would more exhilarate the domestic circle than the discovery of a remedy for the red ants. Such discovery I have made and wish you to communicate to the public through your useful paper. Common salt is a complete barrier to the approach of the red ant. Let the salt be so placed that they cannot approach the place from which you wish to exclude them without passing over it, and the remedy is complete. For instance, if you wish to exclude them from the cellar cupboard or any movable cupboard, if it has no legs make artificial legs to your cupboard, then provide something suitable to hold for each leg of the cupboard, a pint or a quart of salt, in which place the legs of the cupboard, and set it free from every thing else so that nothing can creep on to it without passing over the salt, and the remedy is complete. Having tested this remedy for two seasons I have no hesitation in recommending it as a complete cure. — *Worcester Ægis.*

Facts worth Knowing. — In New England, in the days of my grandmother they used to preserve their ripe Watermelons and Green Corn, so as to have them fresh in winter and spring, by placing them, till used, under their haystacks. This practice might perhaps be applied usefully to some other fruits and vegetables.

Farmers too, might easily save the flesh of horses and cows, and confer a kindness on their animals, in preventing the usual annoyance of flies by simply *oiling* the parts most exposed. Flies will not alight a moment on the spot, over which an oiled sponge or cloth has been pressed. Probably either fish or flaxseed oil would answer; but what I have known with success was the Tanner's oil. Every man who is compassionate to his beast, ought to know this simple remedy, and every livery stable and country inn ought to have a supply at hand for the use of travellers.

Fruit Trees. — When farmers raise their own fruit trees from the seed (as they will in time if they rightly comprehend their own interest) it is never worth while to graft them in the nursery. Let them grow till you can ascertain what sort of fruit they will naturally produce. The famous Baldwin, or Pecker apple was a come-by-chance. Had the original tree been cut off and grafted near the ground, according to the usual proceeding in nurseries, the public could never have been benefited by that valuable fruit. Mr Upham of Newton, gave us an apple which grew on a tree spontaneously produced on his premises, which has as fine a flavor as any apple we have tasted this season. An experienced nurseryman assures us that the best way to manage with apple seeds intended for sowing is to *keep them in the fruit* through the winter, and sow them in the spring.

Flower Pots for Rooms. — At a meeting of the Horticultural Society, a paper was read upon the manner of cultivating plants in pots filled with moss only and not mould. It appeared that the method to be pursued, was to fill a pot with coarse moss of any kind, in the same manner as it would be filled with earth, and to place a cutting or a seed in this moss. The secretary was understood to say, that he was well acquainted with the practice, and that it succeeded admirably, especially with plants destined to ornament a drawing room. In such a situation plants grown in moss, were stated to thrive better than if they were in garden mould, and to possess the very great advantage of not causing dirt, by the earth's washing out of them when watered. For transportation, plants rooted in moss were said to be better adapted, on account of their lightness. In short, the method was declared to be in all ways excellent. The explanation of the practice seems to be this: that moss rammed into a pot, and subjected to continual watering is soon brought into a state of decomposition, when it becomes a pure vegetable mould; and it is well known that *pure* vegetable mould is the most proper of all materials, for the growth of almost all kinds of plants. The moss would also not retain more moisture, than precisely the quantity best adapted to the absorbent powers of the root — a condition which can scarcely be obtained with any certainty by the use of the earth. — *London News of Literature.*

Preservation of Plums, Peaches, &c. — An English publication states that plums and peaches may be preserved sweet through the

year by the following process: "Beat well up together equal quantities of honey and spring water; pour into an earthen vessel, put in the fruits all freshly gathered and cover them quite close. When any of the fruit is taken out, wash it in cold water, and it is fit for immediate use."

Preservation of Seeds. — If seeds are intended to be sent a great distance, or it is wished to preserve them a long time they should be wrapped in absorbent paper, and surrounded by moist brown sugar.

Leaves of Trees Fodder for Cattle. — A remarkable feature in the Agriculture of France, and of most warm countries, is the use of leaves of trees as food for cattle. Not only are mulberry, olive, poplar, vine, and other leaves gathered in autumn, when they begin to change color, and acquire a sweetness of taste; but spray is cut green in July, dried in the sun or in the shade of trees in woods, fagoted, and stocked for winter use. During that season they are given to sheep and cattle like hay; and sometimes, boiled with grain or bran, to cows. The astringency of some sorts of leaves, as the oak, is esteemed medicinal, especially for sheep.

Fashions in Flowers.—There is a fashion in everything. There have been fashions in medicine, education, the fine arts, diet, nothing has escaped this irresistible invader. Art and nature both have been made to yield to its sway, and whenever fashion dictates, it is surprising how soon all the principles of beauty and of taste conform to its rules.

There has been among other fashions a fashion in flowers. Among the leaders in its circles of taste and refinement, some one flower has always been predominant for a time, its possession sought, and its cultivation promoted.

The tulip has had its day of glory. In the day of its ascendancy thousands of pounds were given for a single flower of a rare variety, and the mania of purchasing tulips was equal to the mania of purchasing lands which pervades our times. The Hyacinth had its day and has always been a quiet family favorite. The Rose, the charming, voluptuous fragrant rose, claimed the sceptre, and governed for a time, the idolized queen of every bosom. A monarch of so much grace and loveliness it was found difficult to depose, and thousands

despite the irresistibility of fashion still assert her claims to the ascendancy.

The Dahlia was announced — a new flower, tall and elegant in its bearing, with its slender and curving stalk, bearing its beautiful and regular crown of rich and ever-to-be-varied tint. The new candidate was seized upon and carried by acclamation. It became an object of unceasing assiduity with florists, and was adopted as the pride of the boudoir and the garden.

The Dahlia has held its ascendancy for some seasons; and every year seems to develope new varieties and give additional richness to its tints. Every skillful gardener has had the satisfaction of giving name to some new variety; and although the Dahlia is only to be seen in its full glory, in its natural and unshorn state, where it presides in such gardens as Prince's and Maynard's, yet those who would know its capabilities of improvement and variation, should attend such an exhibition as has just closed in New York — "The Annual Exhibition of Dahlias of the New York Horticultural Society."

Yes, the Dahlia has its annual exhibitions, and they are beautiful and "highly interesting." Not only fashion, but true taste declares them so to be. And why should not the rose, the tulip, and other of Nature's most wonderful and charming creations, have their "exhibition." Why should there not be a general exhibition of the infinite variety of flowers which might be brought together, to give a glow of pleasure to minds (and what *mind* is not) alive to the value of these gifts of the Creator. We should like a general fashion, and flowers and a pure unsophisticated love for their intimate beauties better than any particular inclination toward the lead of fashion; and while we give the beautiful and graceful, though adornless Dahlia, our full tribute of admiration, yet we are aware of many a simple beauty occupying the retired corners of the garden, which only requires a kind hand to bring it forward, introduce it, and fairly exhibit its features, to render it no contemptible rival.— *Long Island Star.*

Horticulture.—There are men among us, who look upon the cultivation of flowers with perfect contempt. They can see no utility in this occupation, and look upon the amateur florist as a lack-a-daisical, sentimental character, more fitted to write sonnets and to read novels, than to act efficiently in the business of life. To such, the fragrance of the rose, the tints of the lily, and the delicate formation of the violet, are forever lost: an avenue to pleasure open to others,

is to them completely closed; a sense, which to others is the source of much pleasure, is denied them; the light of beauty radiating from each blossom, is shut out from their minds — for, though the form and substance of creation be admitted, its soul — its expression, never reaches them.

Such claim to be our matter-of-fact men — utilitarians — the most useful members of society; they believe that they have great duties to discharge, and have no time to spare to examine matters of small moment. Flowers, they admit, are *pretty things*, fitted to please the idle — pretty things, indeed, but mere toys for the young and romantic — they, forsooth, have occupations of more importance than to multiply and increase such trifles; and from their eminence they look down with contempt upon the grown-up man who wastes his valuable time in the cultivation of these insignificant objects.

They forget that this world is not a mere matter-of-fact world; they overlook the truth that the Deity, in providing fruit and grain, has not been unmindful of the blossoms and the foliage. He stayed not his hand at mere utility as regards animal life; he bounded not his creative power to the production of food and raiment; he ministered not merely to the actual wants of life, but clad the fields in verdant green, tinged the fruit with its golden hue and added a surpassing beauty to foliage and flower. Shall we eat and drink and forget His ministration to our moral taste?

No one was ever intended for a mere business man — to travel, as in a bark-mill, in one dull, dreary round — day in and day out — month in and month out — year in and year out — to exert every faculty, in the business of life. Men are not created as machines, for the production of a required amount of useful commodity. They have more to do, than to earn their bread, and to eat it; more to accomplish, than to strive for a high station, and to fill it. Man has a moral nature to be strengthened and educated; he has a susceptibility of soul to be touched and excited: and all this is most quickly and easily accomplished, by an attention and constant reference to the works of Him who has left, wherever his hands have wrought, the marks and types of those attributes, which warm and purify and exalt the heart. Without this moral culture, man is an animal only, as unlike the being he should be, as the mere grain of wheat, fitted to sustain life, is unlike the waving corn, in all its richness and loveliness, as it covers the mountain side.

Why is it, that those who enter upon the examination of the works

of nature, in any of her various channels and departments, become so enthusiastic in the research? Why does their ardor constantly and regularly increase with the increase of their knowledge? Read the lives of eminent naturalists, look to the zeal manifested around you by all who have entered into such studies. It does not arise from mere increase of intellectual power, as affording valuable results to society; for duty here is often discharged from a sense of duty, without any ardor of feeling. It is not the mere force of habit; for habit is more like the chain which binds one to a given course, than wings to fly with to objects we love. It is because there is natural taste in every man, which, when gratified, is strengthened and quickened — a taste for the magnificent and beautiful objects in creation, which can never be satiated, but which carries us onward in our researches; an appetite which grows with that it feeds upon.

It matters not what department of nature we explore; it matters not whether we examine the earth, look to the monster of the deep, or seek the shells of the beach; whether we look to the animal life or the vegetative process. The heavy mammoth, the insect floating in the air, the rugged mountain, the bright crystal of its bosom, the lofty tree, and the simple flower at its foot, afford the same result; they each read to us the same lesson. The paths open before us are numerous, yet they all lead to the presence of a God, sustaining and beautifying the creation he has formed; and the florist in the path he has chosen, will find at each step of his progress, distinct traces of the goodness of God, in thus providing so bountifully for the taste he has imparted; for not a flower expands itself, not a blossom opens its leaves, but speak to him in language, which, if attended to, will make him a better and happier man.— *Portsmouth Paper.*

A New Manufacture. — In a late Paris Journal is found the following account of a new manufacture, which has already acquired a considerable success, and promises to be of great importance.

On the borders of the streams and in the valleys of New Zealand, there grows a plant which resembles at the same time the corn flag and the aloes. This plant, to which naturalists have given the name of *Phormium tenax*, is the hemp of the natives. They break it with large muscle shells, and then separate with their nails the hemp from the flax. They weave it afterward into a sort of net, like lace, which they bleach in the dew. The beauty of this fabric has astonished navigators. Cook, Foster, and Dumont d'Urville have spoken of it.

Messrs. Lisson and Richard described it in their botanical work on Australia. Since 1827, several English merchants have attempted to make use of this plant; capital, mechanical power, nothing was spared. But they did not succeed in ridding it of the resinous gum which it distils, and softening it enough for weaving. An ingenious countryman of our own, M. Lienard, has just regulated and brought to perfection the attempts which so far had remained stationary among the English. He has established at Pont Remy a manufactory of the *Phormium tenax*. The cloths that were shown at the public exposition appeared to us as beautiful, but more substantial, more pliable, and lighter than linen cloth. They seemed to be appropriate for sails and for the covering of carriages. Amateurs have made and renewed demands for it. One of the great properties of the Phormium is, that it can remain under water five, six or seven months without being injured. Numerous experiments on ropes and cables leave no doubt in this respect. The factory of M. Lienard, situated at Pont Remy, employs more than a thousand workmen. Before many months we are assured that the great increase of this fabric will cause the number to amount to three thousand. Before being brought to the weaving state this plant goes through seven operations, which are so little costly that all included, even to the combing, does not amount to six francs the quintal. We repeat that this fact is very important. At the moment when the cloth manufacture has fallen in France, when we cannot in any market maintain a rivalship with England, Holland and Belgium, here is a fabric, which can and ought to take the place of cotton. This is perhaps a great source of wealth to come into France. Marshal Clausel has introduced the culture of the *Phormium* into Algiers. The government will understand the economy of its use in the Navy. In England, where as yet they only make cables of the *Phormium*, it is preferred to any other kind of cable. But shall this manufacture be left to a caprice of rivalship? Cannot England shut up New Zealand from us? Will not the State protect a French establishment on this island?

A Plant possessing the properties of Spontaneous Combustion. — A very interesting paper was recently read by Mr Mornay, before the London Linnean Society, describing a shrub which grows on the rivers of Brazil, and which is called the Euphorbia Phosphorescens. Where this Euphorbia forms large entangled, impenetrable masses, covering perhaps, a quarter of an acre of ground, and

growing some twenty feet high, it will take fire spontaneously, emitting for some time, a vast column of dense black smoke, and at last bursting out in flames. Whenever the author had an opportunity of observing the combustion of the juice of this plant, on its coming into contact with atmospheric air, the temperature was very little raised; the combustion (with flame) went on at a low temperature, until stopped by the formation of a crust, which quickly takes place. The temperature always appeared to be too low to spread into a conflagration.

Cultivation of the Fig.— The lovers of this excellent fruit will be gratified to learn that it may be cultivated in our climate with little expense and labor. During a late visit to the garden of Eliphalet Averill, Esq. of this city, we were presented with a fig plucked directly from the tree, and of flavor the most delicious. Mr A. informed us that for ten years he had been experimenting on the cultivation of the fig, and that he had finally succeeded in preserving the tree, and bringing the fruit to perfection. He also kindly gave us a statement of his method, which we lay before our readers in the hope, that at least some of them will be induced to try the experiment, as we have no doubt of its complete success. The fig tree is propagated by means of layers and cuttings — if the latter are used they should be at least one foot long.

The method of Mr A. is as follows: He lays down the branches in June, which form roots and grow luxuriantly. Immediately after the leaves fall off in autumn, and before hard frosts destroy their vitality, he lays them down and covers them with earth to the depth of at least a foot. In order that a part of the roots may retain their original position in the earth and be ready to furnish nourishment early the ensuing spring, he loosens the root on one side of the tree and leaves those on the other undisturbed — taking care that those loosened are not mutilated or otherwise injured. He then bends the branches over those roots that are left in the ground, fastens them with pegs and covers both roots and branches with mellow earth to the depth above stated. In this condition he leaves them till the middle of May, or the first of June, according to the forwardness or backwardness of the season, and then uncovers them — sets them upright and supports them with props to keep them in a right position. By repeating this process every winter he has succeeded in preserving his trees till they have attained a good size, and produce fruit in perfection and abundance.

The fig tree in tropical climates has a constant succession of crops. In Georgia, it yields three crops, and in New England, in good seasons, it will produce two. When the figs are half, or two-thirds grown, they cease growing and present every appearance of not coming to maturity. To facilitate their ripening a drop of olive oil is put upon their blossom ends, which, in eight or ten days, produces an extraordinary effect. In this time they obtain their full size, assume a liver color, and in delicacy of flavor as much exceed preserved figs as fresh peaches do those that are dried in the common manner.— *Silk Culturist.*

Art V.—*Description, Properties and Uses of some Species of Plants in the Natural Order Fungi.*

This order includes Plants in the lowest station of vegetable existence, some of which are eatable, others, are a deadly poison, some are medicinal, and the species *Amanita muscaria* produces intoxication. "They grow with a degree of rapidity unknown in other plants, acquiring the volume of many inches in the space of a night, and are frequently meteoric, that is, spring up after storms, or only in particular states of the atmosphere.— The *Mushroom, Agaricus campestris*, is highly esteemed by many, and used in a variety of ways. The sauce known by the name of *Ketchup* is made from its juice, with the additions of salt and spices. They are also eaten fresh when fried, stewed or boiled; or as a pickle. As there have fatal accidents occurred, by using through mistake, those species possessing deleterious qualities, it is important that those who gather and use them, should be enabled to distinguish the true Mushroom from the spurious. It is thus described, "The *gills* are loose, of a pinky red, changing to liver color, in contact but not united with the stem; very thick set, some forked next to the stem, some next the edge of the cap, some at both ends, and generally in that case excluding the intermediate smaller gills. *Caps*, white changing to brown, when old, and becoming scurfy, fleshy, and regularly convex, but with age flat, and liquifying in decay; *flesh* white: diameter commonly from one inch to three or sometimes four or more. *Stem* solid, one to three inches high, and almost half an inch in diameter."

To depend upon those gathered in the field is rather uncertain, and it is said that their flavor is not so good as those cultivated in gardens.

As the spawn is easily obtained, and their cultivation not difficult, we would recommend to those who are particularly fond of the *Mushroom* to turn their attention to the subject.

"If the Mushroom be left for a time on a plate of glass, a powder will be found deposited of a whitish color, which is the spore or organic germs. That these are capable of germination, like the prolific spore of the Ferns, is evident to those cultivators who now form artificial Mushroom beds by strewing the decayed plants on prepared banks of manure."

"To ascertain whether what appears to be Mushrooms are so or not, a little salt should be sprinkled on the inner or sponge part — if in a short time afterwards they turn yellow, they are the poisonous kind of fungus; but if black, they may be considered genuine Mushrooms. They should never be eaten without this test, as the best judges may be occasionally deceived."

The following excellent communication on the Mushroom we find in the 8th vol. of the N. E. Farmer, page 254, which, as it seems appropriate, and may not have been read, or perhaps forgotten by most of our readers, we give it entire.

MUSHROOMS.

Mr Fessenden,— I am not aware that much attention has been devoted to the cultivation of the vegetable named at the head of this article, although some attempts have been made in one or more of the Southern States, but with what success I am not informed.

The mode of constructing beds, the collection of spawn, or originating it, and of propagating from it, are described with much particularity by Loudon, in his Encyclopedia of Gardening, and in Fessenden's New American Gardener, as well as by McMahon, in his treatise upon the same subject.

It was my intention to have transcribed from these works, some of the directions in relation to the culture of the Mushroom, for the benefit of those who might be disposed to attempt it.

But to do justice to the subject, and to place before your readers all the directions needful to a complete understanding of the manner of preparing the materials, to the formation and spawning of the beds, or of originating the spawn, I find would occupying much time and labor that may be dispensed with, and you can make such selections from these works as you may deem requisite, and thereby confer a particular favor upon the public at large, and the writer in particular.

My attention has recently been directed to this subject by a highly

respectable and accomplished amateur Horticulturist, whose cultivated taste induces, and whose affluent circumstances afford him the means of extending Horticulture. In a letter received by him he remarks, "There is one production of the Garden, which is much, I may say, wholly neglected here, (New York,) and I hope you have successfully attempted it to stimulate us. I mean the Mushroom. I made the attempt this fall, but I could procure no spawn that was good from the nursery men here, and the private gardens are destitute of it. The same disappointment I met with in Philadelphia. This luxury has become very common in Europe, and a recommendation in the New England Farmer, *as on all* occasions, would be well received here."

Mushrooms may be produced without planting the spawn, or, as it is termed, without spawning the beds.

The President of the Massachusetts Horticultural Society caused a bed to be prepared and planted with asparagus roots. It was composed of horse manure, that had lain two or three years in heaps, the bed was made as such usually are for such a purpose. One single shoot of asparagus only appeared to reward his labor, but in the autumn the whole surface of the bed was covered with mushrooms, and the supply was abundant for the whole season.

The method recommended by Loudon, for raising this vegetable without planting the spawn, is more simple than is the preparation of the bed for the raising of the asparagus. He observes, "after having laid a floor upon the surface of the ground, of ashes, stone chips, gravel or brick bats, so as to keep the ground quite dry and free from under damp, lay a course of horse droppings, new from the stable, six inches thick. They must not be broken, and the drier they are the better. They may be collected every day if your stable does not furnish enough at once to complete the first layer of the above thickness. But they must not be allowed to ferment or heat. The bed should be exposed to the air as much as possible while making up, but carefully defended from wet if out of doors, or it may be in a cellar or under a shed. When the first course is quite dry, and supposed to be past a state of fermentation, cover it with two inches of light dry earth. If sandy so much the better. It is immaterial whether it be rich or not, the only use of the earth being for the spawn to run *en masse* in. Then lay another course of droppings and earth over as before, when it has fermented. Then a third in like manner, and the bed is completed. It should be a little rounded

in order that it may not be more wet or moist in the centre than on the sides. This may be effected by the formation of the floor at first and the bed will be of equal strength in all parts. Beds are sometimes made with two courses instead of three, and when materials are scarce, three four inch courses with an inch of earth between each, and a two inch covering or two have been found to answer."

I may trouble you again upon the subject. My present purpose is to waken attention to it. The Horticultural Society will probably offer a premium as a stimulus to the cultivation of the Mushroom.

Dorchester, Feb. 20, 1830. ZEBEDEE COOK, JR.

We are not aware that much if any attention has been given in the neighborhood of Boston, to the culture of the Mushroom. If there be any successful cultivators of the article, we should be happy to have a communication from them for the benefit of our readers and the public in general. A production so delicious, as many consider it, ought to be more abundant in our market.

Besides the Mushroom, there are other eatable species in this natural order. In Europe is found the Truffle or Esculent Puff-ball (*Licoperdon tuber.)* This is a solid, externally rough fungus, filled with farinaceous sporæ, without root, and grows wholly under ground.

The common puff-ball belongs to the same genus. "The *Tubercibarium*, said to have been found in the United States, is collected for food in Europe and Asia. It grows above the earth, is globose, solid, destitute of root, and at length becomes black and warty. In this genus, among the most simple of all organized bodies, the substance of the fungus is merely variegated with sporiferous veins.

"The subterraneous Tuber, however, of the southern States, esteemed as an article of food, is probably the *Scleratium Cocos*, of Schwartz and Schwenitz. It is as large as a human head, exactly of the form of a Cocoa nut, and is covered with a ligneous, fibrously scaly, hard, brown bark; internally filled with a somewhat fleshy, cork-like matter, when in perfection approaching to flesh-color. It is scarcely acted upon by any re-agent and remains unaltered for months when macerated in water, having no fermentable substance. In this genus, the form varies somewhat, it is internally solid or filled up, and of a similar and smooth substance within: but in some species it becomes wrinkled externally.

Nothing, really organic can be of a more simple structure than the subject of this genus, and particularly of the present gigantic species.

Yet still, these almost amorphous masses are subject to life and death, experience growth and give origin, as parents to a renewed progeny." The esculent Morel in the genus Phallus, is also an article of food, said to be found in the shady forests of Pennsylvania, and on the banks of the Mississippi and Missouri.

In describing the properties of the natural order Fungi, Dr Lindley remarks, "It is necessary to exercise the utmost care in employing Fungi, the nature of which is not perfectly ascertained, in consequence of the resemblance of poisonous and wholesome species, and the dreadful effects that have followed their incautious use. It is true that many kinds are named by Pallas, as being commonly used by the Russians, which are plentiful in countries where they are not employed for food; but, in the first place, it is not perhaps quite certain that poisonous and wholesome species are not confounded under the same name: in the next place, climate may make a difference; and lastly, much depends upon the mode in which they are cooked. Upon this subject Delile observes, that it was ascertained by Paulet, in 1776, that salt and vinegar removed every deleterious principle from that most poisonous plant the *Agaricus bulbosus;* that it is the universal practice in Russia to salt the Fungi, and that this may be the cause of their harmlessness, just as the pickling and subsequent washing of the poisonous Agaric of the Olive renders it eatable in the Cevennes; but that nevertheless it is much wiser to run no risk with unknown Fungi, even taking such precautions; a remark to which he was led by the lamentable death of a French officer and his wife, in consequence of breakfasting off some poisonous Agarics, which were nevertheless eaten by other persons in the same house with impunity. It was probable that in that case a difference in the cooking was the cause of the difference in the effect of the Fungi; but it was a sufficient ground for distrusting all Fungi excepting the cultivated ones.

So strongly did the Professor L. C. Richard feel the prudence of this, that although no one was better acquainted with the distinctions of Fungi, he would never eat any except such as had been raised in gardens in mushroom-beds. One of the most poisonous of our Fungi is the *Amanita muscaria*, so called from the power of killing flies when steeped in milk. Even this is eaten in Kamschatka, with no other than intoxicating effects, according to the following account by Dr Langsdorff, as translated by Dr Greville, from whom I borrow it.

"This variety of *Amanita muscaria* is used by the inhabitants of

the northeastern parts of Asia in the same manner as wine, brandy, arrack, opium, &c. is by other nations. Those Fungi are found most plentifully about Wischna, Kamschatka and Wilkowa Derecona, and are very abundant in some seasons, and scarce in others. They are collected in the hottest months, and hung up by a string in the air to dry; some dry of themselves on the ground; and are said to be far more narcotic than those artificially preserved. Small deep colored specimens, thickly covered with warts, are also said to be more powerful than those of a larger size and paler color. The usual mode of taking the Fungus is, to roll it up like a bolus, and swallow it without chewing, which the Kamschatkadales say, would disorder the stomach. It is sometimes eaten fresh in soups and sauces, and then loses much of its intoxicating property; when steeped in the juice of the berries of *Vaccinium uliquinosum*, its effects are those of strong wine. One large or two small Fungi is a common dose to produce a pleasant intoxication for a whole day, particularly if water be drank after it, which augments the narcotic principle. The desired effect comes on from one to two hours after taking the Fungus. Giddiness and drunkenness result in the same manner as from wine or spirits; cheerful emotions of the mind are first produced; the countenance becomes flushed; involuntary words and actions follow, and sometimes at least an entire loss of consciousness.

"It renders some remarkably active, and proves highly stimulant to muscular exertion: by too large a dose, violent spasmodic effects are produced. So very exciting to many individuals, is this Fungus, that the effects are very ludicrous. If a person under its influence, wishes to step over a straw or small stick, he takes a stride or jumps sufficient to clear the trunk of a tree; a talkative person cannot keep silence or secrets; and one fond of music is perpetually singing.

"Of parasitical Fungi, the most important are those which are called dry rot, such as polyporus destructor. Merulius lacrymans and vastator, &c. which are the pest of wooden constructions; next to these come the blight in corn, occasioned by Puccinia graminis, the smut and ergot, if they are really anything more than the diseased and disorganized tissue of the plants effected; the result, which is owing to the ravages of Æcidiums; and finally in this class is to be included what we call mildew, minute, simple, articulated Mucors, Mucedos, and Byssi. The genus Rhizomorpha, which vegetates in dark mines far from the light of day is remarkable for its phosphorescent properties. In the coal mines near Dresden, the species are de-

scribed as giving these places the air of an enchanted castle; the roofs, walls, and pillars are entirely covered with them, their beautiful light almost dazzling the eye. The light is found to increase with the temperature of the mines. It is a most remarkable circumstance, and one which deserves particular inquiry, that the growth of minute Fungi, which constitute what is called mouldiness, is effectually prevented by any kind of perfume. It is known that books will not become mouldy in the neighborhood of Russia leather, nor any substance if placed within the influence of some essential oil."

It is supposed by some, that this natural order forms a connecting link with the mineral kingdom; but we see a distinct line of demarcation, " as the respective particles of the mineral or inanimate kingdom have no limited tie of existence, and remain unalterable and inert, being alone subject to the laws of chemical relation," whereas, the Fungi are produced from the spore or seed, and experience growth and are subject to decay and death like all other vegetables. In a future number we may give some further directions for the cultivation of Mushrooms, in the mean time we hope to hear from some of our correspondents and friends, what progress has been made in their culture in this vicinity. J. B.

Art. VI. — *On the Management of the Plants, belonging to the Genus Citrus, in the Garden of Edward Miller Mundy, Esq.* By Mr Richard Ayres.

My green-house is fortynine feet long, and seventeen feet wide, with a glazed sashed roof, sloping to the south; the back and sides are solid walls; the front is nine feet and a half high, and has six glazed folding doors, the intervals between which are filled with fixed glazed sashes. The floor is a stone pavement, and the house is warmed by a flue built on arches, and carried under the pavement near to the front glass, the heated air being admitted into the house through ventilators from a narrow air chamber adjoining to the flue. The back wall on the inside, is eighteen feet high, and that, as well as the sides of the house, are covered with a trellis, the openings of which are six inches square. Adjoining the back wall, at even distances from each other, are six holes in the pavement, each two feet square; in these are growing trees in the following order: — 1, a Lemon; 2, a China

Orange; 3, a Lemon; 4, a Citron; 5, a Seville Orange; 6, a Lemon. They were planted young, nine years since; the border of earth in which they grow extends under the pavement, and their branches are trained to the trellis. In the same manner, last year, a Citron tree was planted against the west side, and a Lime tree against the east side; and these are trained to the trellis at the two sides respectively. Besides the above eight trees, there are twentytwo in tubs, seventeen of which were brought from Malta by Captain George Mundy, of the Royal Navy, to his father, six years ago; they were then small, but have grown finely since, and the fruits they have recently produced have been excellent both for size and flavor. In addition to these trees in tubs, other greenhouse plants in pots are kept in the house in the winter season. The conservatory, of which a section and ground plan are annexed is thirtytwo feet six inches long; it is divided longitudinally into three borders; the back border is three feet eight inches wide, and its level is elevated three feet above the other part of the house by means of a wall which supports it. A paved walk, two feet eight inches wide, is carried over the border, so that only about one foot of it next the back wall is exposed to view: in this border, at even distances, are planted one Lime, and three Lemon trees; the Lemons are of my own working, they are nine years old from the bud, and are now in a fine bearing state; the lime was only turned out of a tub last March. The centre border is thirteen feet broad; in it are planted, in a double row, four in each row, at even distances, eight trees, viz: two standard China Oranges, one Dwarf China Orange, three Seville Oranges, and two Maltese Oranges; these last are young plants put in two years ago; the other six trees are all in a bearing state. In the front border, which is only four feet wide, three trees were planted in 1818; one is a China Orange, three years old from the bud, and the two others are Lemons. This house is also used for the growth of Grapes: Vines are planted in the front of it, on the outside, and trained up the rafters of the glass roof, being introduced through holes in the front wall. The trees in each of the three borders of the conservatory are trained in different ways. Those in the back border are fastened to a trellis against the back wall. The trees in the centre border have their branches in every part secured to a row of stakes set along the front and sides of the border, at even distances from each other; the stakes are each six feet in length above the ground, into which they are driven about a foot and a half; such of the branches as can be brought into contact with these stakes are

fastened to them, the others are tied to stakes placed irregularly in different parts of the border, but chiefly at the back; by these means the branches are spread evenly over the whole extent of the border, are well exposed to the sun and light, and also produce a beautiful effect, whether in blossom or in fruit, the stakes having more the appearance of supports than of being placed for the purpose of fastening the branches to them. The trees in the front border are trained flat on a horizontal trellis in the manner of peach trees in a house, the trellis being two feet from the ground. The borders both in the greenhouse and conservatory were filled, at the time the fruit trees were planted, with a compost made as follows: to twelve barrows full of strong turf loam, six of good rotten dung and three of vegetable mould were added; these were properly incorporated six months previous to being used, and then put into the borders. After I had planted both the house, having a few old trees in tubs and pots which were not in good health, I was induced to try on them the effect of a richer compost, and I also applied to them waterings of a compounded liquid manure. These sickly trees were restored to good health in twelve months, and as they made fine fruitful wood, I was so satisfied of the advantage of my new compost and of the composition water, that I determined in future to use them with all my other plants, whether in the borders or in tubs and pots. I have applied them in the manner hereafter detailed, and the beneficial effects resulting from their use have exceeded my expectations, not only in the vigor and richness of the wood and foliage, but in the abundance, size and flavor of the fruit.

The compost is formed of ten parts (a wheelbarrow full is my usual integral quantity) of strong turf loam, seven of pigeon's dung, seven of garbage either from the dog-kennel or butcher's yard, seven of sheep's dung, seven of good rotten horse dung, and ten of old vegetable mould; they must be mixed together twelve months previous to use, that time being necessary to bring the ingredients into a proper state of pulverization. The composition water is prepared as follows; three wheelbarrows full of cow dung fresh from a pasture field, two wheelbarrows full of fresh sheep's dung, and two pecks of quick lime are thrown into one hogshead of soft water; the mixture is frequently stirred for a week or ten days before it is used, and when applied to the plants, ought to be about the consistence of cream. Previous to describing my method of cultivating the plants, I cannot avoid observing that in the usual management of Oranges and other trees of the

same description in greenhouses, however fine the plants, they only serve the purpose of ornament, and are otherwise useless, never producing any fruit fit for the table. The failure arises from the common practice with most gardeners of taking these trees out of the greenhouse when they put out the common greenhouse plants for the summer months; whereas, the proper course which they ought to follow, is to keep them in the house through the whole season, and to avail themselves of the removal of the other plants to apply the peculiar treatment necessary to bring them into proper bearing. From the experience which my practice has given me, I do not think that Orange and other similar trees require much warmth in the winter months; I therefore never suffer my house to be heated above 50 degrees by fire heat until the end of February, or the beginning of March, when, the trees, if in good health, will begin to show blossom; the fire-heat should then be increased to 55 degrees; but the houses ought not to be warmed above 65 degrees at this time by sun-heat, the excess of which must be checked by the admission of air; and indeed the more air the trees have during the time of blossoming, the more certain will be the crop of fruit. My trees are washed with a hand syringe about twice a week in the winter months, advantage being taken of the middle of the day for that work in cold weather; in summer they are washed in the morning, and it is then done every day. During the time the trees are in blossom, they require more care in respect to watering, I therefore then use a syringe with a top, the holes of which are so small that they will not admit a fine needle to pass through them. Clean soft water from the cistern in the conservatory is used for all these purposes. As soon as the fruit is set I begin to water the trees at their roots with the composition-water above described, giving more or less according to discretion; the trees having no other sort of water during the summer months, except what little falls from their leaves when they are syringed each morning.

In the early part of June the greenhouse plants are taken out for the summer, and I then begin to force the trees, by keeping the heat in the house up as near as possible to 75°, for I do not consider that either Citrons, Oranges, Lemons, or Limes can be grown fine and good with less heat. Whilst the forcing is going on, particular attention is paid to the waterings above described. In June I also give the trees, whether in the borders or in tubs and pots, a top dressing of the rich compost before mentioned, this is of the greatest advan-

tage in swelling the fruit, and it is done in the following manner.—The earth above the roots is moved with a small hand fork, taking care not to disturb any part of the roots; all the loose earth is then removed clear to the roots, and replaced with the compost. This operation I have performed for the last six years, on the trees in the borders, and to it I principally attribute my success in producing such fine and abundant crops. With respect to pruning the trees, I do not know that regular directions can be given for the work, but I will state in what manner the trees at Shipley are treated. Early in February they are looked over; at that time it is apparent what wood is likely to be fruitful, and as a certain quantity of old branches are yearly cut away I take out those which seem least promising, and so make room for the younger and more productive wood. If the trees afterwards grow very strong, the shoots are shortened according to their strength, in the same way as Peach trees are shortened. Thus the branches pruned are not only fruitful, but they are restrained to any shape desired, for no sort of fruit trees bear the knife more patiently than those I am treating of. There is some nicety required in thinning and arranging the crop. When the fruits are about the size of Green Gages, it is proper to thin them. Two fruits should never be left together, for they would neither be fine nor well formed; the quantity left to ripen must also depend on the age and strength of the tree. The thinnings have no pulp when of the size above mentioned, and are much esteemed by the confectioner, making excellent preserves.

The fruit which I exhibited to the Society was part of the produce of 1818, which was particularly great in that year, nineteen of the older trees yielded two hundred and seventyeight dozen of ripe fruit, being nearly fifteen dozen on an average to each tree. This quantity was thus produced: the Citron tree in the greenhouse bore eight dozen, each Citron measuring from fourteen inches and a half to sixteen inches and a half in circumference; three China Orange trees, viz: one in a greenhouse, and two in the conservatory, had 60 dozen of fruit, some of which measured thirteen inches round; six Seville Orange trees viz., one in the greenhouse, three in the conservatory, and two in tubs, bore one hundred and forty dozen of fruit; seven Lemon trees, viz., three in the conservatory, three in the greenhouse, and one in a tub, had fifty dozen of fruit; and from two Lime trees, which were then in tubs, but which are now in the border, as above mentioned, twenty dozen of fruit were obtained. The crop was not

so large last year, I did not expect it would be so, but the Citron yielded seven dozen of fruit; one of them Mr Mundy sent to the Society in December last, it was seventeen inches and a half in circumference. The produce of the other different trees was fine, not only as respected its appearance, but the excellence of its quality. The trees this year promise an abundant crop. — *Horticultural Transactions.*

Art. VII. — *A Few Remarks on the Dahlia.*

The Dahlia, although one of the most magnificent flowers cultivated, is as much, or more, subject to variableness and uncertainty than any other flower we have; and among the best varieties grown, there is not one upon which reliance can be placed.

In one garden, we observe some particular sort blooming in the greatest perfection, whilst in another we see the very same kind having nothing but imperfect, even single blossoms; and thus it is we hear the flower spoken of in the highest terms by some persons, whilst others discard it as being worthless. This has frequently occurred, and I would mention the names of some individuals who have done so, and who are experienced growers to a great extent, and well know the properties constituting a good flower; such as Messrs Brown, Widnall, Squibb, Brewer, Harrison, Levick, &c. &c. They have, even when grown the first season, discarded such flowers as Widnall's Granta, Douglas's Criterion, Aldam's Superb Yellow, Lady Fordwich, Harrison's Unique, Metropolitan Perfection, and many others of equal merit; but when subsequently seen by them in the collections of other growers, their properties have been acknowledged to be of the very first rate quality.

With regard to the opinions advanced on the qualifications required to form a good flower, they are almost as endless in variety as the Dahlia itself, for every grower has his own opinion. However, it must be generally admitted that *form* must stand *first*, color next, and size last. In my opinion, the rules laid down in a former number of the *Cabinet* is a correct criterion, by which judges of the flowers ought to be governed. I have many times seen instances at the different Dahlia exhibitions I have attended, where the first prize was awarded to a stand of flowers, merely because it contained the sole merit of having larger flowers than its rivals, and far superior formed

flowers, but less, in size, come in for a second or a third prize. I have seen also, that, in the prizes of the different classes, the same sort of arrangement has been made, and Wilmot's Superb, has been placed first, whilst Springfield Rival comes in as a fourth, although the bloom was perfection itself in form and odor. In fact, I have sometimes concluded, that in the opinion of some, it mattered not how ugly the flower might be, even if disfigured with an eye, it was sure to gain a prize if it were but sufficiently large. I venture to mention for the guide of those growing large flowers, the societies at Lynn, Maidstone, Hertford and Wakefield. If one of the committee, or the secretary of a society would take the trouble to attend the next Dahlia exhibition of the Metropolitan Society of Florists and Amateurs on August 11, or September 8th, he might then have a good idea of deservedly awarding prizes. Or even take the rules I have before alluded to as a criterion. We should not then see such monstrous 'broomhead' flowers, utterly void of good form, taking the first, or any prize at all, in an exhibition! The stands would no longer be disgraced with the broomhead size, and more unique in form would be substituted in lieu thereof.

It is surprising to observe the different constitutions of the Dahlia, some kinds produce the most perfect blooms when almost impoverished, when on the other hand, if they are grown luxuriantly, all the blooms come with an eye, or otherwise imperfect. Whereas some kinds if not grown in fresh good soil, produce some half double blooms, and during the whole season, not a good bloom, from the plant so grown can be produced. The season and situation, likewise, have a great effect upon some of the kinds, as well as extensive propagation. This was the case with the Newick Rival last season, to the disappointment and vexation of many, which Messrs Young and Penny so extensively propagated, and scarcely a single plant produced a bloom that might be called good, only with the exception of the first few cuttings taken off before the parent root was too much exhausted; and it is to be feared some of our highly described flowers will disappoint several, merely because they have been so much propagated. Persons raising seedling Dahlias, should not dispose of them until they possess a sufficient quantity of roots of each, so that only a few will be required from each individual root. I am persuaded if this method was adopted, our new flowers would answer more to the description given of them in the catalogues.

The greatest alteration generally takes place with seedlings. Some

kinds when grown in the seed-beds in poor soils appear very beautiful, but when propagated the following season and bloomed, they prove everything but perfect and good, and disappoint the expectation previously formed of them. I have seen instances where the raiser of seedlings, plants them out with all the care he takes with his general collection, in fresh rich soil, &c. thinking, probably, that if they proved good with that treatment, he might rely upon their appearing so ever afterwards — but in this, disappointment generally occurs, for when the situation is changed, the numbers of plants are dispersed amongst "The Fancy," some may produce fine good flowers, whilst others are utterly worthless. The most sure way of judging of the merits of a seedling is, to grow it two years in situations as opposite to each other as possible. If this were practised more generally, disappointment, which leads people to think that they are imposed upon, would not be so prevalent, as is the case at present. — *Floricultural Cabinet.*

Art. VIII.—*Massachusetts Horticultural Society.*

At the Anniversary of the Massachusetts Horticultural Society on Saturday the 24th ult., the following gentlemen were elected officers for the ensuing year.

President.—Elijah Vose, Dorchester.

Vice Presidents.—E. Bartlett, Roxbury, Jonathan Winship, Brighton, Samuel A. Shurtleff, Boston, John Prince, Roxbury.

Treasurer.—William Worthington, Dorchester.

Corresponding Secretary.—Robert Treat Paine, Boston.

Recording Secretary.—Ezra Weston, Jr., Boston.

Counsellors.—Theodore Lyman, Jr., Boston, Augustus Aspinwall, Brookline, Thomas Brewer, Roxbury, Henry A Breed, Lynn, M. P. Sawyer, Portland, Maine, Nathaniel Davenport, Salem, Thomas Whitmarsh, Brookline, J. M. Gourgas, Weston, Oliver Fiske, Worcester, William Pratt, Jr., Boston, Samuel Jaques, Jr., Charlestown, Joseph G. Joy, Boston, William Kenrick, Newton, John Lemist, Roxbury, Benjamin Rodman, New Bedford, Thos. G. Fessenden, Boston, Jacob Tidd, Roxbury, Jonathan Winship, Brighton, Aaron D. Williams, Roxbury, J. W. Webster, Cambridge, Geo. W. Brimmer, Boston, David Haggerston, Watertown, Charles Lawrence, Salem.

Professor of Botany and Vegetable Physiology.—Rev. John L. Russell.

Professor of Entomology.—T. W. Harris, M. D.

Professor of Horticultural Chemistry.—J. W. Webster, M. D.

STANDING COMMITTEES.

Committee on Fruits.—Wm. Kenrick, Chairman, Robert Manning, Benj. V. French, Edward M. Richards, John A. Kenrick, John M. Ives, Salem, Samuel A. Shurtleff, Samuel Downer, Samuel Pond, P. B. Hovey, L. P. Grosvenor.

Committee on Products of Kitchen Garden.—D. Chandler, Chairman, Jacob Tidd, Nathaniel Davenport, Aaron D. Williams, Leonard Stone, Rufus Howe.

Committee on Flowers, Shrubs, &c.—Samuel Walker, Chairman, G. M. Hovey, Joseph Breck, S. Sweetser, D. Haggerston, Samuel R. Johnson, M. P. Wilder.

Committee on the Library.—Elijah Vose, Chairman, Jacob Bigelow, T. W. Harris, Robert T. Paine, J. E. Teschemacher, Ezra Weston, Jr., Chas. M. Hovey.

Committee on Synonyms of Fruit.—John Lowell, Chairman, Robert Manning, William Kenrick, Samuel Downer.

Executive Committee.—Elijah Vose, Chairman, Cheever Newhall, Benjamin V. French, Joseph T. Buckingham, L. P. Grosvenor.

Committee on Finance.—Elijah Vose, Chairman, Benjamin V. French, Cheever Newhall.

Voted, That the thanks of the Society be presented to Ezra Weston, Jr., Esq. for his highly interesting and instructive Address delivered before them on their Eighth Anniversary, and that he be respectfully requested to furnish a copy thereof for publication.

Voted, That Messrs Walker, Paine, and French be a Committee to present the above vote to Mr Weston, and to superintend the publication of the Address.

Voted, That the thanks of the Society be presented to Samuel Walker, Esq. the Chairman, and to the Committee of Arrangements, for their acceptable services in preparing for the Exhibition on Saturday last.

Saturday, Oct. 1, 1836.

EXHIBITION OF FRUITS.

Pears, by Samuel Philbrick, from his Estate in Brookline — Heathcot, and Duchesse D'Angouleme.

By Col. Wilder, from his Estate in Dorchester — Marie Louise.

By John Prince, from his Mansion at Jamaica Plains — Easter Beurre.

By L. P. Grosvenor — A fruit, name unknown.

Apples, by Mr Downer — Wine apple, so called; a pale red, striped, round fruit of middle size, very tender and sweet with an agreeable acid. This fruit is not the wine apple, properly so called.

Plums, by Samuel Pond — A good sized dark purple Plum, of an oval form and good flavor.

Grapes, by Edward P. Tileston — Unripe specimens of a new variety of native grape from the West, having the same foxy flavor of most of our common native varieties.

By Samuel R. Johnson, from his garden in Charlestown — Sweet Water, the produce of out of door cultivation, also fine specimens of Black Hamburg. For the Committee,

WILLIAM KENRICK, *Chairman.*

Saturday, Oct. 7, 1836.

EXHIBITION OF FRUITS.

From the President, Hon. E. Vose — Pears, Johonnot, Andrews, Long Green or Mouille Bouche, Eschasserrie and one other, name unknown.

From S. Pond — A Pear called the Julienne.

From Dr. Swan, of Medford — one of the new varieties of Pears, name unknown, size of the Bartlett, juicy, and very fine flavored.

A Pear was exhibited, but not tasted, from S. G. Perkins, Esq., called the Archangel St Michael, had much the appearance of the old St. Michael and probably the same.

Plums from S. Pond — The Semiana and also the fruit of the Japan Quince, Cydonia Japonicea, and a Pear name unknown.

Apples from E. Sharp, Esq., Dorchester — the Alexander. From Geo. Newhall, Dorchester — fine specimens of Apples, Talmon's Sweeting, and other kinds name unknown; also Broca's Bergamot Pears. For the Committee,

B. V. FRENCH.

Saturday, Oct. 14, 1836.

EXHIBITION OF FRUITS.

Andrews Pear, from Dr Swan, of Medford.

Dix Pear, from E. Bartlett, Roxbury.

Julienne, Johonnot, Fulton, and a specimen of Pears not in eating, from Samuel Pond, Cambridgeport.

Semiana Plums, from S. Pond.

Shurtleff's Seedling Grapes, from S. A. Shurtleff.

Fine Specimens (out door culture) of White Chasselas and Black Hamburg Grapes from S. R. Johnson, Charlestown.

For the Committee,

E. M. RICHARDS.

Saturday, Oct. 22, 1836.

EXHIBITION OF FRUITS.

From R. Manning — St Ghislain, Saunder's Beurre, Belle Lucrative and Capsheaf pears; fine specimens. Also, Italian Prunes, very fine.

From E. Vose — Belle Lucrative, Seckel, Lewis, Broca's Bergamot, Heathcot, and Urbaniste Pears.

From S. Downer — Urbaniste, Seckel, Duchess de Angouleme, Passe Colmar, Autumn Beurre, Beurre Diel, Fulton and Cumberland Pears, the latter a very beautiful looking fruit. Also, Snow Apples.

From S. Pond — Fulton, Julienne (Coxe,) Johonnot Pears and a kind the name unknown.

Porter Apples from G. Parsons, Esq.

From I. Clapp — Plate's Bergamot Pears and two kinds of Apples.

From J. Eustis, of South Reading, York Russet Apples, Burnet Pears, from Dr Joel Burnet of Southborough, a native, very fine, large, but not so large as former years, owing to the unfavorable season. For the Committee, S. POND.

ART. IX.—*Exhibition of Dahlias, at New York; by George C. Thorburn.*

A SPLENDID exhibition of Dahlias took place in the gallery of the seed store of Mr George C. Thorburn, New York, on the 7th and 8th of October, principally of his own growing, from roots, many of which were imported the past season, embracing some of the most choice new varieties, which could be obtained in England, raised by Widnall, Wells, and other celebrated Dahlia growers. We were highly gratified in witnessing this rare display of beauty, and present

to our readers a few notes taken at the time. Many fine varieties exhibited are already in some of our collections in the vicinity of Boston. Probably not less than 150 or 200 varieties were on the stand. We shall notice such as particularly struck our fancy, and such as we would recommend to the amateur cultivator.

Turrant's Invincible, a fine large variety; very much admired; color, shaded salmon; quite unique. Black Ajax: fine dark. A seedling from Widnall, without name; universally admired; white, with a fine cherry border. Inwood's Ariel; shaded lilac and white; beautiful. Douglass's Glory; extra fine, scarlet; cupped petals. Miss Wortley; sulphur tipped with lilac; a small flower but fine. Criterion; fine shape; white edged, light purple. Wells' Marpessa; variously tinted with pink, centre nearly white, exterior petals fine pink, very full, one of the finest. Village Maid; a different flower altogether from the one of that name with us, more delicate and good shape. Wells' Pindarus; extra fine, pale yellow, edged or tipped with rosy red. Mrs Gen. Grosvenor; white, edged with rose pink, centre petals cupped, superior. Julius Cæsar; fine crimson. Wilmot's superb; fine purple. Wells' Queen of Sheba; fine yellow, said to be good, but a bad specimen. Widnall's Venus; white edged with rose pink. Bride of Abydos; pure white, very good, but not equal to its recommendation. Cedo nulli; yellow, petals margined with bright yellow, good. Wells' Sylvestra; large white. Exemplar; one of the finest on the stand, white tinted with straw color, Countess of Liverpool shape. Mrs Wilkinson; fine white. Wells' Paragon; sulphur, with white edge, first rate. Newick Rival; the finest rose color exhibited, petal cupped. Widnall's Paris; rosy purple, cupped petals. Aurantia perfecta; the finest orange color on the stand, large flower. Hermione; white delicately edged with purple, fine. Widnall's Salmonia; salmon color, with a purplish shade; quite unique. Alba purpuriata; white with pale purple edge, petals delicately margined. Cicero; fine scarlet. Primeana; yellow, tipped with red. British Queen; good rose color. Coronet; fine large purple. Pratt's Clio; buff shaded or tipped with purple, singular. Duke of Braganza; white and lilac beautifully margined with red. Brown's Midas; fine yellow. Guido, white and rose, pink edge, small and fine. Angelina; white edged with lilac; very fine. Metropolitan Calypso; delicate rose: elegant. Jupiter, fine scarlet. Widnall's Agamemnon; scarlet cupped petals; fine. Wells' Cassandria; delicate rose color; highly spoken of, but the specimens exhibited not

good. Niobe; blush, margined with red; good. Wells' Medusa; white with pink edge; very fine. Wells' Dictator; orange scarlet; color fine, but shows a green centre. Wells' Cassalia; white shaded with lilac. Pothecary's Lord Nelson; white with purple edge; petals cupped; superior. Widnall's Clio; fine rosy or ruby color. Wells' Enchantress; white tipped with lilac; fine. Brown's Desdemona; white with rose pink edge; fine. Widnall's Emperor; purple striped with crimson. Camellia flore albo; fine white. Harding's Bride; pure white. Beauty of Cambridge; white with rosy purple edge.

There were many other beautiful flowers; some of which, perhaps, would be considered as fine as those named. The room was fancifully ornamented with Dahlias wrought in the shape of hearts, stars, &c.; a large globe suspended from the ceiling, was covered with the petals of Dahlias, of different colors, and had a pleasing effect. Mr Thorburn has a fine collection of pictures, that line the walls of the gallery, which, together with his large aviary containing numerous canary and other birds; globes of gold fish; vases of artificial flowers and many other curiosities, in connexion with the show of flowers, gave much interest to the scene and attracted crowds of admiring spectators. It is surprising to see the endless variations which have taken place in this beautiful flower since it was first introduced from its natural habitat, the table land of Mexico. It is but a few years since it was first known among us, and only a few varieties of what we should now call worthless flowers were cultivated; but these were considered magnificent. Every year numerous old varieties are thrown aside, to give place to a superior improved generation. We have now arrived at the "Acme of Perfection," or at least we should think so from the name of a new Dahlia, figured in one of the last English periodicals; but probably this and most of what we now consider so elegant, will soon be eclipsed by those still more elegant, and we cannot set any bounds to the improvements which can be made with this popular flower.

We have now all the shades of red, yellow, purple, and from pure white to almost black; but as yet we have seen none that approaches to a blue. We have seen the figure of a blue and violet colored Dahlia in an English work, but doubt its existence. M. Decandolle observes, "that it may be inferred with a degree of probability approaching to certainty, that no blue variety of Dahlia will ever be found, because blue and yellow being the primitive colors of flowers, and always exclusive of each other, no blue flowers can change to yellow, nor yellow to blue." J. B.

Art X. — *On the Culture of the Pansy or Heartsease.*

There is scarcely any plant now in cultivation, which is of greater interest to a flower-garden than the Pansy. The extreme neatness, beauty and variety of the kinds, their duration of blooming from April to November, and their peculiar adaptation for almost any part of a flower-garden — renders the Pansy peculiarly pre-eminent. Although the plant is of humble growth, yet it may be grown upon an elevated mound of soil, so as to exhibit its beauties as lofty as desirable. I have cultivated it in several situations after the following manner:

I had a raised octagonal shaped cone, constructed in the centre of a flower garden, which was two yards high, I formed it by having troughs made one foot broad and eight inches deep, the above tier to the height named. The interior of the troughs had not a boarded bottom, but a bar or two to keep the whole together. The substratum was of good garden soil, and the troughs in which I planted the Pansies was filled with a light rich loamy soil, a compost which I had made of turf soil and manure that had been mixed two years and turned over several times. In this situation the plants bloomed most beautifully, and produced a striking effect.

I had a raised bank made against a wall, in order to conceal it from view of my dwelling, and this was constructed after the same manner, tier above tier to the height of five feet, and was equally handsome. The troughs were formed of tiles eight inches deep, above the soil of the lower tier, and the lower edge was inserted six inches to keep the tile upright.

From the above statements it will be obvious to the readers of the Cabinet, that an elevated bed may be made of any shape or height, in which this charming little plant may be grown, and, having the flowers raised so near to view, is a desirable advantage.

Occasional watering is necessary, but not near so much as persons might judge would be required.

Having said this much of the appropriateness of the Pansy to suit almost any convenience, I shall now add a few observations on the culture, &c.

Choice of Sorts. — The properties of a superior flower consists in the brilliancy of each color, that is, of each color being decidedly strong; the form of the flower should be as near a circle as possible,

and the larger the better ; the edges of the petals not to be fringed or undulated at all, but even and regular. In a flower, shaped as above described, the small angles which are seen in many pansies where the petals intersect each other, are wholly done away with ; the eye should be rather small, and the stigma to fill the same.

Propagation. — New varieties are readily obtained from seeds. Some care is necessary in collecting the seeds, as the capsule (seed vessel) undergoes but little change after it is formed, very soon bursting. When the seeds are ripe, however, the capsule, which before was pendulous, now becomes erect, and in a few hours afterwards, if the day be sunny, the seeds will be dispersed.

If the seeds be gathered any time from May to September, it should be sown immediately after being collected, but if after September it is better to defer the sowing till Spring.

If the seed be sown in the open border, a shady situation is the best, the soil not being so liable to become droughty. If in boxes they can be placed in any situation desirable. Sow the seeds in rich light soil, let the surface be made fine and smooth, cover with fine sifted soil about one-eighth of an inch deep, and gently, with a flat board, press the soil to the seed. Never allow the soil to become dry till the plants are up. When the seedling plants are about an inch high, they may be transplanted about four inches apart, into a bed of light rich soil. If the situation be a little shady it will be the better for the plants ; if the season be dry, occasional watering will be necessary. The plants will bloom the same season if sown early in the year, and, if later, they will bloom the following spring the best will easily remove to another situation.

By Cuttings. — Cuttings will readily strike root at any time from the first of April to the end of September, if the cuttings be selected from young shoots, the old shoots at the end of summer being hollow, and such seldom push roots. The ends of the shoots, about two inches long, are suitable for the purpose, cutting through, close under a joint ; they should be inserted in a fine soil of sand and loam, be watered well, and shaded for a few days. At the end of summer it is best to insert cuttings in pots or boxes, so that they can be placed in a frame to be assisted in striking.

By Slips or Offsets. — The plants will often have a quantity of shoots that will have struck root, these slips may be taken off at any time by removing a portion of the soil, and cutting the slips or offsets off with a portion of roots to each.

By Layers. — There are a few kinds which I have found difficult to increase by cuttings, nor could I get the shoots to rest when earthed up, in order to encourage them to strike roots into the soil; such, I have layered the same as carnations, using a finely sifted soil, and covering the incised part with it; I did not need a hooked peg. This mode is very easily done, at any time from the end of March to the early part of October, and with certain success.

In order to have fine blooming plants, it is necessary to have a stock raised every year. Such as are raised early in the present year, bloom fine from April to July, and those raised later in the present year, bloom from July to the end of the season. One year old plants are the best blooming ones, make the neatest patches, and look the handsomest. When much older they make long and straggling shoots, producing small blossoms. Being so easy of propagation and culture, a continuance of bloom may be secured nine months in a year. I find that Pansies grown on the elevated beds, being drier than the ordinary borders of the garden, stand well through the severest winters. Those plants I cultivate in the usual beds and borders of my garden, I cover the soil close up to the plants with some rotten tanner's bark, or mulchy manure from an old mushroom bed, to the depth of two or three inches, which fully answers the purpose of preserving them from inconvenience. If there be convenience, young plants of a sort, may be potted off at the end of September, and be kept in a cool frame or cool greenhouse till March following. I have done both.— *Cabinet.*

Art. XI. — *Gardeners' Work for November.*

Preserve your Cabbages. — These vegetables will bear considerable frost, but cannot be taken up and preserved too soon after the 1st of November. Take them up in a dry day; turn their tops downwards, and suffer them to remain so for a few hours, to drain off any water, which may have lodged between the leaves, then make choice of a ridge of dry earth in a well sheltered warm exposure, and plant them down to their heads thereon, close to one another, having previously taken off some of the loose hanging leaves. Immediately erect over them a low temporary shed of any kind that will

keep them perfectly free from wet, which is to be open at both ends to admit a current of air in mild dry weather. These ends are to be closed with straw when the weather is very severe. In this situation your cabbages will keep in a high state of preservation till spring; for being kept perfectly free from wet, as well as from the action of the sun, the frost will have little or no effect upon them. In such a place the heads may be cut off as wanted, and if frozen soak them in spring, well or pump water, for a few hours previous to their being cooked, which will dissolve the frost and extract any disagreeable taste occasioned thereby.

The principal gardener in the Shaker establishment in New Lebanon, Columbia county, N. Y. gave the following directions for preserving cabbages in autumn. "Do not pull them up till there is danger of their freezing too fast to be started. If there happens an early snow it will not injure them. When they are removed from the garden they should be set out again in a trench dug in the bottom of a cellar. If the cellar is pretty cool it will be the better."

Mr Derby, of Salem, Mass. states his mode of preserving cabbages as follows: "I have selected one of the most airy situations on the farm, spread a few leaves on the ground to keep them clean, and placed them upside down, close to each other, and shook among them leaves sufficient to cover them, leaving part of the root perfectly out, then throw on just enough seaweed to prevent the leaves from blowing away."— *Mass. Agr. Rep. Vol. VII. p.* 57.

PRESERVE YOUR CELERY. — On the approach of frost, take up a part of the crop and lay it under sand for winter use. Those plants which are left in beds may be covered with litter to be removed in mild weather. In *Cobbett's American Gardener*, it is directed to preserve celery in beds as follows: "Two boards a foot wide each, their edges on one side laid upon the earth of the ridge, formed into a *roof* over the point of the ridge, the upper edge of one board going an inch over the upper edge of the other, and the boards fastened well with pegs, will do the business completely; for it is not the frosts but the occasional *thaws*, that you have to fear, and the *wet* and *rot* which they produce." Those cabbage and cauliflower plants which you mean shall stand through the winter in frames, should, during the continuance of mild weather, be allowed every advantage of free air, to inure them by degrees to bear cold. Take the glasses off entirely in the warm part of the day, but place them on again at night, and in wet or cold weather. If your beets, turnips, parsnips, &c. are not secured, take them up and proceed as directed.